

What is claimed is:

1. A mobile communications system in which first
and second frequencies are allocated to each wireless
5 communications area, comprising:

a first base station device provided in a first
wireless communications area;

a second base station device provided in a second
wireless communications area;

10 a third base station device provided in a third
wireless communications area adjacent to the first and
second wireless communications areas;

a first controller accommodating said first base
station device and controlling communications
15 conducted by said third base station device using the
first frequency; and

a second controller accommodating said second
base station device and controlling communications
conducted by said third base station device using the
20 second frequency.

2. The mobile communications system according to
claim 1, wherein

when a mobile station using the first frequency
25 in the first wireless communications area moves from

the first wireless communications area to the third wireless communications area, said third base station device communicates with the mobile station using the first frequency.

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3. The mobile communications system according to claim 1, wherein

when a mobile station using the second frequency in the first wireless communications area moves from the first wireless communications area to the third wireless communications area, said third base station device communicates with the mobile station using the second frequency.

15 4. The mobile communications system according to claim 1, wherein

when a mobile station using the first frequency in the third wireless communications area moves from the third wireless communications area to the first wireless communications area, said first base station device communicates with the mobile station using the first frequency.

20 5. The mobile communications system according to claim 1, wherein

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when a mobile station using the second frequency in the third wireless communications area moves from the third wireless communications area to the first wireless communications area, said first base station device communicates with the mobile station using the first frequency.

6. The mobile communications system according to claim 1, wherein
said third base station device is connected to said first controller via a first transmission line and is connected to said second controller via a second transmission line.

7. The mobile communications system according to claim 1, wherein
said third base station device and said second controller are connected via a physical transmission line,

said second controller is connected to said first controller via a switching device, and

said third base station device is accommodated in said first controller with a logical path established via said second controller and the switching device.

8. A mobile communications system, comprising:

a first base station device provided in a first wireless communications area to which at least a first frequency is allocated;

5 a second base station device provided in a second wireless communications area to which at least a second frequency is allocated;

a third base station device provided in a third wireless communications area, which is adjacent to the first and second wireless communications areas and to which the first and second frequencies are allocated;

10 a first controller accommodating said first base station device and controlling communications conducted by said third base station device using the first frequency; and

15 a second controller accommodating said second base station device and controlling communications conducted by said third base station device using the second frequency.

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9. The mobile communications system according to claim 8, wherein

when a mobile station using the first frequency in the first wireless communications area moves from the first wireless communications area to the third

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wireless communications area, said third base station device communicates with the mobile station using the first frequency.

5 10. . The mobile communications system according to claim 8, wherein

 when a mobile station using the first frequency in the third wireless communications area moves from the third wireless communications area to the first
10 wireless communications area, said first base station device communicates with the mobile station using the first frequency.

11. A mobile communications system, comprising:
15 a first base station device provided in a first wireless communications area to which at least a first frequency is allocated;

 a second base station device provided in a second wireless communications area to which at least a second
20 frequency is allocated;

 a third base station device provided in a third wireless communications area, which is adjacent to the first and second wireless communications areas and to which the first and second frequencies are allocated,
25 wherein

said third base station device is accommodated in different controllers for each allocated frequency.

12. A mobile communications system, comprising:

5 a first base station conducting wireless communications using at least a first frequency;

a second base station conducting wireless communications using at least a second frequency different from the first frequency;

10 a third base station, located adjacent to said first and second base stations, conducting wireless communications using at least the first and second frequencies;

15 a first base station controller managing at least the first frequency used in said first and third base stations; and

a second base station controller managing at least the second frequency used in said second and third base stations, wherein

20 each of said first and second base station controllers further comprises controlling means for allocating the same frequency when there is a hand-off between base station devices managed by the corresponding base station controller.

13. The mobile communications system according to claim 12, wherein

each of said first and second base station controllers further comprises instructing means for
5 instructing said first base station to use the first frequency when there is a hand-off from said third base station to said first base station, and instructing said second base station to use the second frequency when there is a hand-off from said third base station
10 to said second base station.

14. A base station device, located adjacent to a base station using a plurality of frequencies, that shares at least one of the plurality of frequencies, comprising

15 controlling means for performing a soft hand-off process if there is a hand-off from this base station to the adjacent base station when the shared frequency is used, and performing a hard hand-off process using the shared frequency if there is a hand-off from
20 adjacent base station to this base station when a frequency other than the shared frequency is used in the adjacent base station.

15. A base station that is adjacent to at least first
25 and second base stations, comprising:

a wireless unit using a part or all of frequencies used by the first base station as a first shared frequency;

5 a wireless unit using a part or all of frequencies used by the second base station as a second shared frequency; and

controlling means for performing a soft hand-off using the first shared frequency if there is a hand-off from the first base station to this base station when
10 the first shared frequency is used, performing a soft hand-off using the second shared frequency if there is a hand-off from the second base station to this base station when the second frequency is used, performing a hard hand-off process for switching the frequency
15 from the second shared frequency to the first shared frequency if there is a hand-off from this base station to the first base station when the second shared frequency is used, and performing a hard hand-off process for switching the frequency from the first
20 shared frequency to the shared second frequency if there is a hand-off from this base station to the second base station when the first shared frequency is used.

16. A base station controller, connected to a
25 plurality of base stations, for performing a soft

hand-off with priority if there is a hand-off between the connected base stations and if communications conducted before and after the hand-off are controlled by this base station controller, comprising

5 controlling means for controlling, for at least one of the plurality of base stations, only communications conducted using a part of frequencies used by the at least one of the plurality of base stations, and allocating one of the part of the frequencies if
10 there is a hand-off when a mobile station using a frequency that is not controlled by this base station controller in the at least one of the plurality of base stations moves to an area controlled by another base station to which this base station controller is
15 connected.

17. A base station device, that is used in a mobile communications system including a first base station device provided in a first wireless communications area to which at least the a frequency is allocated, a second
20 base station device provided in a second wireless communications area to which at least a second frequency is allocated, a first controller accommodating the first base station device and a second controller
25 accommodating the second base station device, and that

is provided in a third wireless communications area which is adjacent to the first and second wireless communications areas and to which the first and second frequencies are allocated, wherein

5 data are transmitted to and received from a mobile station using the first frequency under the control of the first controller; and

 data are transmitted to and received from a mobile station using the second frequency under the control
10 of the second controller.

18. A base station device, used in a mobile communications system comprising a first base station device provided in a first wireless communications area
15 to which at least a first frequency is allocated, a second base station device provided in a second wireless communications area to which at least a second frequency is allocated and a third base station device provided in a third wireless communications area which is
20 adjacent to the first and second wireless communications areas and to which the first and second frequencies are allocated, that accommodates at least second and third base station devices, comprising:

 a base station management table for registering
25 base station devices to be controlled for each frequency

allocated to corresponding wireless communications area; and

controlling means for controlling the second and third base stations based on information registered in said base station management table.

19. A communications control method in a mobile communications system including a first base station device provided in a first wireless communications area to which at least a first frequency is allocated, a second base station device provided in a second wireless communications area to which at least a second frequency is allocated, a third base station device provided in a third wireless communications area which is adjacent to the first and second wireless communications areas and to which the first and second frequencies are allocated, a first controller accommodating the first base station device and a second controller accommodating the second base station device, wherein the first controller controls communications conducted by the third base station device using the first frequency; and

the second controller controls communications conducted by the third base station device using the second frequency.